

Name : \_\_\_\_\_

## Nature of the Roots

ES3

For the quadratic equation  $ax^2 + bx + c = 0$ ,

If  $b^2 - 4ac > 0$ , the roots are real and unequal.

If  $b^2 - 4ac = 0$ , the roots are real and equal.

If  $b^2 - 4ac < 0$ , the roots are unreal(complex).

Find the nature of the roots using the discriminant.

1)  $p^2 - 6p + 9 = 0$

2)  $8s^2 - 3s - 2 = 0$

3)  $7m^2 + 8m + 3 = 0$

5)  $d^2 + 7 = 0$

7)  $4v^2 - 5v - 9 = 0$

8)  $u^2 - 2u + 1 = 0$

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**Nature of the Roots**

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$b^2 - 4ac = 0$

The roots are

**PREVIEW**

$> 0$

real and unequal.

3)  $7m^2 + 8m + 3 = 0$

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$b^2 - 4ac = -2$

The roots are

$> 0$

real and unequal.

5)  $d^2 + 7 = 0$

$b^2 - 4ac = -28$

The roots are

$< 0$

unreal(complex).

7)  $4v^2 - 5v - 9 = 0$

8)  $u^2 - 2u + 1 = 0$

$b^2 - 4ac = 169 > 0$

The roots are real and unequal.

$b^2 - 4ac = 0$

The roots are real and equal.